

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1-27. (Canceled).

28. (Currently amended) A system comprising a test sample and one or more metal particles arranged on a solid support, wherein said test sample comprises one or more biomolecules, and wherein said one or more metal particles and at least one of said one or more biomolecules in said test sample are positioned at a distance apart sufficient to affect intrinsic emission of electromagnetic radiation of at least one of said one or more biomolecules upon exposing said system to exciting electromagnetic radiation, ~~and wherein an extrinsic fluorescent marker is not a part of the system, and wherein each of said one or more biomolecules is individually a biomolecule selected from the group consisting of a nucleoside, a nucleotide, a purine, a pyrimidine, an oligonucleotide, a polynucleotide, an amino acid, a peptide, a protein, a lipid and a sugar moiety.~~

29. (Previously presented) The system of claim 28, wherein said support is glass or quartz.

30. (Previously presented) The system of claim 28, wherein said one or more metal particles is multiple metal particles arranged as an array of islands on said support.

31. (Previously presented) The system of claim 28, wherein said one or more metal particles is multiple metal particles in the form of a film on said support.

32. (Previously presented) The system of claim 28, wherein said one or more metal particles is coated with a polymer, a gel, an adhesive, an oxide or a biological material.

33. (Previously presented) The system of claim 28, wherein said one or more metal particles is coated with an oxide.

34. (Previously presented) The system of claim 28, wherein one or more second biomolecule is attached to said one or more metal particles, and intrinsic emission of electromagnetic radiation of at least one of said one or more second biomolecule is affected upon exposing said system to exciting electromagnetic radiation.

35. (Previously presented) The system of claim 33, wherein one or more second biomolecule is attached to said one or more metal particles, and intrinsic emission of electromagnetic radiation of at least one of said one or more second biomolecule is affected upon exposing said system to exciting electromagnetic radiation.

36. (Currently amended) The system of claim ~~28~~, 34 or 35, wherein each ~~biomolecule of said one or more biomolecules and each biomolecule of said one or more second~~ biomolecule is individually a biomolecule member selected from the group consisting of a nucleoside, a nucleotide, a purine, a pyrimidine, an oligonucleotide, a polynucleotide, an amino acid, a peptide, a protein, a lipid and a sugar moiety.

37. (Previously presented) The system of claim 28, wherein said one or more metal particles comprises a noble metal.

38. (Previously presented) The system of claim 37, wherein said noble metal is a member selected from the group consisting of rhenium, ruthenium, rhodium, palladium, silver, osmium, iridium, platinum and gold.

39. (Previously presented) The system of claim 30, wherein each of said one or more metal particles is sub-wavelength in size.

40. (Previously presented) The system of claim 28, wherein the surface of each of said one or more metal particles is at a distance of about 50 Å to about 2000 Å from the biomolecule.

41. (Previously presented) The system of claim 28, 34 or 35, wherein said affect on intrinsic emission of electromagnetic radiation of at least one of said one or more biomolecules or at least one of said one or more second biomolecule is an enhancement of intrinsic emission.

42. (Previously presented) The system of claim 28, wherein said electromagnetic radiation has a wavelength of from about 280 nm to about 295 nm.

43. (Previously presented) The system of claim 28, wherein said electromagnetic radiation has a wavelength of about 520 nm.

44. (Previously presented) The system of claim 34 or 35, wherein said intrinsic emission of electromagnetic radiation of at least one of said one or more second biomolecule is affected in response to binding by a biomolecule in said test sample.

45. (Previously presented) The system of claim 28, 34 or 35, wherein said exciting electromagnetic radiation is multi-photon excitation.

46. (Currently amended) A system comprising a test sample and a suspension of one or more metal particles, wherein said test sample comprises one or more biomolecules, ~~and~~ wherein one or more metal particles and at least one of said one or more biomolecules in said sample are positioned at a distance apart sufficient to affect electromagnetic radiation emission of at least one of said one or more biomolecules upon exposing said system to exciting electromagnetic radiation, wherein said one or more metal particles is a metal selected from the group consisting of rhodium, palladium, silver, iridium, platinum and gold, and wherein each of said one or more biomolecules is individually a biomolecule selected from the group consisting of a nucleoside, a nucleotide, a purine, a pyrimidine, an oligonucleotide, a polynucleotide, an amino acid, a peptide, a protein, a lipid and a sugar moiety.

47. (Previously presented) The system of claim 46, wherein said suspension of one or more metal particles is a colloidal suspension.

48. (Previously presented) The system of claim 46, wherein said one or more metal particles is coated with a polymer, a gel, an adhesive, an oxide or a biological material.

49. (Previously presented) The system of claim 46, wherein said one or more metal particles is coated with an oxide.

50. (Previously presented) The system of claim 46, wherein each of said one or more metal particles is sub-wavelength in size.

51. (Previously presented) The system of claim 46, wherein the surface of each of said one or more metal particles is at a distance of about 50 Å to about 2000 Å from the biomolecule.

52. (Previously presented) The system of claim 46 or 48, wherein one or more second biomolecule is attached to said one or more metal particles, and electromagnetic radiation emission of at least one of said one or more second biomolecule is affected upon exposing said system exciting electromagnetic radiation.

53. (Previously presented) The system of claim 46, wherein said one or more biomolecules is labeled with an extrinsic fluorescent marker.

54. (Previously presented) The system of claim 52, wherein said one or more second biomolecule is labeled with an extrinsic fluorescent marker.

55. (Previously presented) The system of claim 53, wherein said extrinsic fluorescent marker is a fluorophore.

56. (Previously presented) The system of claim 54, wherein said extrinsic fluorescent marker is a fluorophore.

57. (Previously presented) The system of claim 52, wherein said electromagnetic radiation emission of at least one of said one or more second biomolecule is affected in response to binding by a biomolecule in said test sample.

58. (Canceled).

59. (Currently amended) The system of claim 52, wherein each of said one or more second biomolecule is individually a biomolecule member selected from the group consisting of a nucleoside, a nucleotide, a purine, a pyrimidine, an oligonucleotide, a polynucleotide, an amino acid, a peptide, a protein, a lipid and a sugar moiety.

60. (canceled).

61. (Currently amended) The system of claim ~~4660~~, wherein said one or more metal particles is noble metal is selected from the group consisting of rhenium, ruthenium, rhodium, palladium, silver, osmium, iridium, platinum, and gold.

62. (Previously presented) The system of claim 46, wherein said affect on electromagnetic radiation emission of at least one of said one or more biomolecules is an enhancement of emission.

63. (Previously presented) The system of claim 52, wherein said affect on electromagnetic radiation emission of at least one of said one or more second biomolecule is an enhancement of emission.

64. (Previously presented) The system of claim 46, wherein said electromagnetic radiation has a wavelength of from about 280 nm to about 295 nm.

65. (Previously presented) The system of claim 46, wherein said electromagnetic radiation has a wavelength of about 520 nm.

66. (Previously presented) The system of claim 46 or 55, wherein said exciting electromagnetic radiation is multi-photon excitation.

67. (Currently amended) A composition comprising one or more metal particles a ~~metal particle~~ coated with one or more biomolecules, wherein said metal particle and at least one of said one or more biomolecules are positioned at a distance apart sufficient to affect intrinsic emission of electromagnetic radiation of at least one of said one or more biomolecules upon exposing said metal particle to exciting electromagnetic radiation, ~~and~~ wherein an extrinsic fluorescent marker is not a part of said composition, wherein said one or more metal particle is a

metal selected from the group consisting of rhodium, palladium, silver, iridium, platinum and gold, and wherein said one or more biomolecules is a biomolecule selected from the group consisting of a nucleoside, a nucleotide, a purine, a pyrimidine, an oligonucleotide, a polynucleotide, an amino acid, a peptide, a protein, a lipid and a sugar moiety.

68-69. (Canceled).

70. (Currently amended) The composition of claim ~~67~~⁶⁹, wherein said one or more metal particle is noble metal is selected from the group consisting of rhenium, ruthenium, rhodium, palladium, silver, osmium, iridium, platinum, and gold.

71. (Previously presented) The composition of claim 67, wherein each of said metal particles is sub-wavelength in size.

72. (Previously presented) The composition of claim 67, wherein said distance between the surface of each of said metal particles and said one or more biomolecules is about 50 Å to about 2000 Å.

73. (Previously presented) The composition of claim 67, wherein said composition is a suspension of one or more of said metal particles coated with one or more biomolecules.

74. (Previously presented) The composition of claim 73, wherein said suspension is a colloidal suspension.

75. (Previously presented) The composition of claim 67, wherein said metal particle is coated with an intermediate layer between said metal particle and said one or more biomolecules, wherein said intermediate layer is a member selected from the group consisting of a polymer, a gel, an adhesive, and an oxide.

76. (Previously presented) The composition of claim 75, wherein said intermediate layer is an oxide.

77. (Previously presented) The composition of claim 67, wherein said affect on intrinsic emission of electromagnetic radiation is an enhancement of intrinsic emission.

78. (Previously presented) The composition of claim 67, wherein said electromagnetic radiation has a wavelength of about 280 nm to about 295 nm.

79. (Previously presented) The composition of claim 67, wherein said electromagnetic radiation has a wavelength of about 520 nm.

80. (Previously presented) The composition of claim 67, wherein said one or more biomolecules may be the same or different.

81. (Previously presented) The composition of claim 67, wherein said electromagnetic radiation emission of said one or more biomolecules is affected by a biomolecule in a test sample.

82. (Previously presented) The composition of claim 67, wherein said exciting electromagnetic radiation is multi-photon excitation.